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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
TALBOT, MICHAEL	
ART UNIT	**PAPER NUMBER**
3722	

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/614,381	HAKENJOS, WERNER	
	Examiner	Art Unit	
	Michael W. Talbot	3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the cutting edges" in line 5. There is insufficient antecedent basis for this limitation in the claim. For examination purposes, it is best understood that the limitation should read "the main cutting edges".

Claim 2 recites the limitation "the cutting edges" in lines 2 and 3. There is insufficient antecedent basis for this limitation in the claim. For examination purposes, it is best understood that the limitation should read "the main cutting edges".

Claim 12 recites the limitation "the normal of a workpiece surface" in line 2. There is insufficient antecedent basis for this limitation in the claim. For examination purposes, it is best understood that the limitation should read "the main cutting edges".

Also regarding claim 2, the phrase "essentially" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is

followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 4 recites the broad recitation "the cutting edges of the centering core run obliquely relative to the feed direction", and the claim also recites "in particular wherein the cutting edges of the centering core have a smaller point angle than the main cutting edges" which is the narrower statement of the range/limitation.

In the present instance, claim 7 recites the broad recitation "wherein the shank", and the claim also recites "preferably at the second end" which is the narrower statement of the range/limitation.

In the present instance, claim 8 recites the broad recitation "wherein the drilling tool", and the claim also recites "in particular the drill head" which is the narrower statement of the range/limitation.

In the present instance, claim 11 recites the broad recitation "the flanks of the main cutting edges have a convexly shaped region", and the claim also recites "in particular wherein the flanks of the main cutting edges are convexly shaped" which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Yousem '218. Yousem '218 shows in Figures 1-4 a drilling tool comprising a shank (10) with a first end (non-tool side) and a second end having a drill head (11,12) with flutes (col. 3, lines 1-4) and at least three lips (14) and a centering cone (12). Yousem '218 shows the main cutting edges (16 in Figure 2) being partially relief-ground wherein the centering cone projects from an area which is described by the main cutting edges by rotation of the drilling tool about its shank axis. Yousem '218 shows the area which is described by the cutting edges comprises essentially a plane area (at centering cone (12) and lip (14) interface). Yousem '218 shows the centering cone having at least three cutting edges (Figure 2). Yousem '218 shows the shaft having at least one step (ridges between coils (10a)) in the feed direction.

Claims 1-6 and 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Maier '389. Maier '389 shows in Figures 1-8 a drilling tool made of high strength steel comprising a shank (1) with a first end (non-flute side) and a second end having a drill head (4) with flutes (30) and at least three lips (31,32,33,34) and a centering cone (36). Maier '389 shows the main cutting edges (8) being partially relief-ground wherein the centering cone projects from an area which is described by the main cutting edges by rotation of the drilling tool about its shank axis. Maier '389 shows the area which is described by the cutting edges comprises essentially a plane area. Maier '389 shows the centering cone having at least three cutting edges (13,14) being partially relief-ground and having a smaller point angle than the main cutting edges (Figure 7). Maier '389 shows the shaft having at least one step (2) in the feed direction. Maier '389 shows the flanks (19) of the main cutting edges having a convexly shaped region in such a way that the drill works free of canting up to 10° to the normal of a workpiece surface to be spot-drilled. Maier '389 shows the flanks of the secondary cutting edges (26) being relief-ground.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Moon '563. Moon '563 shows in Figures 1A-1C a drilling tool comprising a shank (10) with a first end and a second end having a drill head (12) with flutes (16,20) and at least three lips (Figure 1A) and a centering cone (14). Moon '563 shows the main cutting edges (Figure 1A) being partially relief-ground wherein the centering cone projects from an area which is described by the main cutting edges by rotation of the drilling tool about its shank axis. Moon '563 shows the area which is described by the cutting edges comprises essentially a plane area.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 7 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier '389 in view of Melin '267. Maier '389 lacks a clamping surface on the shank and a drilling tool with dual-sided drilling heads. Melin '267 shows in Figures 3 and 5 a clamping surface (11) on the shank of drilling tool (12) and dual-sided drilling head with different diameters (co. 2, lines 3-17). In view of this teaching of Melin '267, it would have been obvious to modify the drilling tool of Maier '389 to include a clamping surface and dual-sided drilling heads shown in Moon '563 to enhance the clamping forces between the clamp means and the drilling tool to create a stronger connection and to include a reversible drilling tool which extends the life of the drilling tool and, with different diameters, has increase versatility.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier '389 in view of Nuzzi et al. '681. Maier '389 lacks reference to a coating applied to the drilling tool for mechanical resistance and anti-corrosion. Nuzzi et al. '681 shows in Figure 1 a drilling

tool (10) being made of HSS and coated with TiN, TiCN or TiAlN. In view of this teaching of Nuzzi et al. '681, it would have been obvious to add a coating disclosed in Nuzzi et al. '681 to the drilling tool of Maier '389 to provide a wear resistance coated surface which ultimately extends the life of the drilling tool by reducing friction and heat generation during cutting.

Claims 7 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon '563 in view of Melin '267. Moon '563 lacks a clamping surface on the shank and a drilling tool with dual-sided drilling heads. Melin '267 shows in Figures 3 and 5 a clamping surface (11) on the shank of drilling tool (12) and dual-sided drilling head with different diameters (co. 2, lines 3-17). In view of this teaching of Melin '267, it would have been obvious to modify the drilling tool of Moon '563 to include a clamping surface and dual-sided drilling heads shown in Moon '563 to enhance the clamping forces between the clamp means and the drilling tool to create a stronger connection and to include a reversible drilling tool which extends the life of the drilling tool and, with different diameters, has increase versatility.

Claims 1-6 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hageman '967 in view of Maier '389. Hageman '967 shows in Figures 1-4 a drilling tool made of hardened steel comprising a shank (12) with a first end (14) and a second end (16) having a drill head with flutes and two lips (40,42) and a centering cone (38). Hageman '967 shows the main cutting edges (26,28) being partially relief-ground wherein the centering cone projects from an area which is described by the main cutting edges by rotation of the drilling tool about its shank axis. Hageman '967 shows the area which is described by the cutting edges comprises essentially a plane area. Hageman '967 shows the shaft having at least one step (18) in the feed direction. Hageman '967 lacks at lest three main cutting edges and at lest three cutting edges on the centering cone. Maier '389 shows in Figures 1-8 a drilling tool with flutes (30) and at least three lips (31,32,33,34) and a centering cone (36) having at least three cutting edges

(13,14) being partially relief-ground and having a smaller point angle than the main cutting edges (Figure 7). Maier '389 shows the flanks (19) of the main cutting edges having a convexly shaped region in such a way that the drill works free of canting up to 10° to the normal of a workpiece surface to be spot-drilled. Maier '389 shows the flanks of the secondary cutting edges (26) being relief-ground. In view of this teaching of Maier '389, it would have been obvious to modify the drilling tool of Hageman '967 to include a third main cutting edge and three cutting edges on the centering cone as shown in Maier '389 to redistribute the cutting forces over a greater area (3 edges in lieu of two) to reduce the wear and ultimately increase the life of the drilling tool.

Claims 7 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hageman '967 in view of Maier '389, further in view of Melin '267. Hageman '967 in view of Maier '389 lacks a clamping surface on the shank and a drilling tool with dual-sided drilling heads. Melin '267 shows in Figures 3 and 5 a clamping surface (11) on the shank of drilling tool (12) and dual-sided drilling head with different diameters (co. 2, lines 3-17). In view of this teaching of Melin '267, it would have been obvious to modify the drilling tool of Hageman '967 in view of Maier '389 to include a clamping surface and dual-sided drilling heads shown in Moon '563 to enhance the clamping forces between the clamp means and the drilling tool to create a stronger connection and to include a reversible drilling tool which extends the life of the drilling tool and, with different diameters, has increase versatility.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hageman '967 in view of Maier '389, further in view of Nuzzi et al. '681. Hageman '967 in view of Maier '389 lacks reference to a coating applied to the drilling tool for mechanical resistance and anti-corrosion. Nuzzi et al. '681 shows in Figure 1 a drilling tool (10) being made of HSS and coated with TiN, TiCN or TiAlN. In view of this teaching of Nuzzi et al. '681, it would have

been obvious to add a coating disclosed in Nuzzi et al. '681 to the drilling tool of Hageman '967 in view of Maier '389 to provide a wear resistance coated surface which ultimately extends the life of the drilling tool by reducing friction and heat generation during cutting.

5. Any inquiry concerning the content of this communication from the examiner should be directed to Michael W. Talbot, whose telephone number is 571-272-4481. The examiner's office hours are typically 8:30am until 5:00pm, Monday through Friday. The examiner's supervisor, Mr. Boyer D. Ashley, may be reached at 571-272-4502.

In order to reduce pendency and avoid potential delays, group 3720 is encouraging FAXing of responses to Office Actions directly into the Group at FAX number 571-273-8300. This practice may be used for filling papers not requiring a fee. It may also be used for filing papers, which require a fee, by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Michael W. Talbot of Art Unit 3722 at the top of your cover sheet.

Michael W. Talbot
Examiner
Art Unit 3722
1 September 2005

BOYER D. ASHLEY
PRIMARY EXAMINER